

# **RESPONSE TO PUBLIC COMMENTS**

**for the Proposed Knauf Insulation GmbH  
Prevention of Significant Deterioration (PSD) Permit Revision**

**Permit No. NSR 4-4-4, SAC 03-01**



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 9**

**San Francisco, California**

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## **TABLE OF CONTENTS**

<b>ABBREVIATIONS AND ACRONYMS.....</b>	<b>3</b>
<b>1. INTRODUCTION.....</b>	<b>4</b>
<b>2. BEST AVAILABLE CONTROL TECHNOLOGY (BACT) COMMENTS .....</b>	<b>6</b>
<b>3. PROPOSED PERMIT REQUIREMENT COMMENTS .....</b>	<b>14</b>
<b>3.1. GLASS PRODUCTION LIMIT.....</b>	<b>14</b>
<b>3.2. GENERAL REQUIREMENTS.....</b>	<b>16</b>
<b>3.3. GLASS FURNACE REQUIREMENTS .....</b>	<b>18</b>
<b>3.4. FORMING/CURING/COOLING (MANUFACTURING LINE) REQUIREMENTS .....</b>	<b>24</b>
<b>3.5. FIBERGLASS TRIMMING &amp; OPERATING REQUIREMENTS.....</b>	<b>26</b>
<b>3.6. GENERAL COMMENTS REGARDING PERMIT REQUIREMENTS .....</b>	<b>27</b>
<b>4. AIR QUALITY RELATED COMMENTS .....</b>	<b>30</b>
<b>5. ENFORCEMENT &amp; COMPLIANCE RELATED COMMENTS.....</b>	<b>32</b>
<b>6. PROCEDURAL COMMENTS .....</b>	<b>35</b>
<b>7. HEALTH RELATED COMMENTS .....</b>	<b>38</b>
<b>8. GENERAL COMMENTS.....</b>	<b>41</b>

## **ABBREVIATIONS AND ACRONYMS**

### Pollutants

CO	Carbon monoxide
HAPs	Hazardous air pollutants
NH <sub>3</sub>	Ammonia
NO <sub>2</sub>	Nitrogen dioxide
NO <sub>x</sub>	Nitrogen oxides
PM <sub>2.5</sub>	Particulate matter with an aerodynamic diameter less than 2.5 micrometers
PM <sub>10</sub>	Particulate matter with an aerodynamic diameter less than 10 micrometers
VOCs	Volatile organic compounds

### Units

lb/hr	pound per hour
lb/ton	pound per ton of glass pulled
µg/m <sup>3</sup>	micrograms per cubic meter
ppm	parts per million
TPD	tons of glass pulled per day
TPY	tons per year

### Acronyms

AAQIR	Ambient Air Quality Impact Analysis
AQMD	Shasta County Air Quality Management District
AQRV	Air Quality Related Values
ATC	Authority to Construct permit
BACT	Best Available Control Technology
CAA	Clean Air Act
CFR	Code of Federal Regulations
EAB	Environmental Appeals Board
EIR	Environmental Impact Report
ERCs	Emission Reduction Credits
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FWS	United States Department of Interior's Fish and Wildlife Service
Knauf	Knauf Insulation GmbH
LNB	Low NO <sub>x</sub> burners
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standards for Hazardous Air Pollutants
NSPS	New Source Performance Standards
NSR	New Source Review
PSD	Prevention of Significant Deterioration
SCR	Selective Catalytic Reduction
SNCR	Selective Non-Catalytic Reduction

## 1. INTRODUCTION

On May 21, 2003, Knauf Insulation GmbH (Knauf) submitted an application to the United States Environmental Protection Agency, Region 9 (EPA) to revise its Prevention of Significant Deterioration (PSD) permit, which was originally issued by the Shasta County Air Quality Management District (AQMD) on March 14, 2000. Knauf's facility manufactures fiberglass insulation and is located in Shasta Lake, Shasta County, California. The facility has been operating since February 2002. Although EPA determined Knauf's PSD application to be administratively complete on August 15, 2003, Knauf submitted several application updates to EPA in September and December 2003, in February, June and October 2004, and December 2005.

On January 31, 2006, the EPA published a public notice in the Redding Record Searchlight newspaper soliciting comments on EPA's proposal to issue a revised permit in accordance with Sections 160-169 of the Clean Air Act (CAA), and 40 CFR Section 52.21 and Part 124. EPA proposed to revise the previously issued PSD permit issued to Knauf. The proposed revised PSD permit would establish PSD requirements for emissions of nitrogen oxides (NO<sub>x</sub>) by allowing an increase in NO<sub>x</sub> emissions from 24.8 tons per year (TPY) to 72.3 TPY from Knauf's manufacturing line. The proposed revision would also allow an increase in emissions of 2.5 TPY of particulate matter less than 10 microns (PM<sub>10</sub>) from Knauf's electric glass melting furnace.

EPA mailed the public notice and a fact sheet, which summarized EPA's action, to a list of interested persons consisting of State, Federal and local contacts, as well as several citizens. The mailing list consisted of persons at more than 500 individual mailing addresses. EPA mailed copies of the proposed revised PSD permit, the Ambient Air Quality Impact Report (AAQIR) which serves as the statement of basis for the permit, the fact sheet, and the public notice on February 3, 2006, to the following public libraries: the Shasta Lake Gateway Library in Shasta Lake, California and the Shasta County Library located in Redding, California. EPA sent the documents to these local public libraries specifically to have the documents available locally for public review. These documents were also available at the EPA office in San Francisco, California and on the internet through EPA's web site beginning February 3, 2006, at <http://www.epa.gov/region09/air/permit/knauf/>.

EPA's public notice on January 31, 2006, scheduled a public hearing in Shasta Lake, California, for March 8, 2006, for EPA to receive the public's comments orally in addition to soliciting written public comment. The public comment period, which ran for a total of 57 days, closed on March 28, 2006. During the comment period, EPA received written comments from 20 members of the public and 11 members of the public submitted oral comments at the public hearing on March 8, 2006. Some members of the public were representatives of community groups. Some of the oral comments were substantially the same as the submitted written comments and EPA received duplicates of some of the written comments. EPA also received written comments from the applicant, Knauf, requesting clarification of some of the revised permit conditions in the proposed PSD permit. Typically, to be considered, comments had to be postmarked, or sent by fax or electronic mail (email) to EPA no later than the close of the public comment period on March 28, 2006. EPA received 3 public comments after the close of the

comment period. EPA will respond to the late comments in addition to those that were timely submitted. Knauf also submitted additional written material after the close of the public comment period. EPA is including the subsequent written material from Knauf in the Administrative Record for EPA's final PSD permit decision.

EPA's response to the significant issues and other air quality-related issues raised in the comment letters and at the public hearing is contained in this document. We have summarized the comment letters and oral testimonies. In some cases, we used the original comment given by the commenter. We then grouped our responses according to the different categories of issues raised by various commenters (e.g. Best Available Control Technology Comments) and subcategories where necessary. Some comments have been paraphrased or generalized to allow direct responses to the concerns raised. Generally, we have noted the commenter's name and organization following the summarized comment. When there was more than one comment on the same issue, category or subcategory, we generally refer to the comment in the singular rather than plural.

Section 3 of this document addresses the specific provisions of the proposed draft permit that have been changed in the final permit decision. The final permit includes some administrative changes that may not be addressed in Section 3. These administrative changes include minor re-wording to clarify some permit conditions (e.g., see Conditions 33 and 57 in the final permit), renumbering of permit conditions due to additional conditions added to the final permit, and correcting typos in the final permit.

Documents upon which EPA relied in reaching our final permit decision and as referenced in our responses to comments, such as the AAQIR and PSD permit application, are contained in the Administrative Record. Copies of the EPA's response to comments document and the final permit are available on EPA's web site at <http://www.epa.gov/region09/air/permit/knauf/>. The web site also provides the index to the entire Administrative Record. Copies of the response to comments document and the final permit are also available for public review at the Shasta Lake Gateway Library located at 4150 Ashby Court in Shasta Lake, California and the Shasta County Library located at 1855 Shasta Street in Redding, California. All documents in the Administrative Record are available at the EPA office at 75 Hawthorne, San Francisco, California.

## **2. BEST AVAILABLE CONTROL TECHNOLOGY (BACT) COMMENTS**

**Comment 2a:** The Top-Down BACT analysis for NO<sub>x</sub> does not look at the facility as never having commenced construction as stated in the AAQIR. The AAQIR concludes that since the curing oven already uses Low NO<sub>x</sub> Burners (LNB), the baseline NO<sub>x</sub> emissions from this operation will be based on the use of LNB. (Mary Scott, Ivan Hall)

**Response 2a:** EPA did evaluate BACT for NO<sub>x</sub> as if the facility had not yet been constructed. The AAQIR on page 9 cites the PSD regulations at 40 CFR 52.21(r)(4) and states: "Thus, for purposes of this permit revision application, EPA considers Knauf a major source for NO<sub>x</sub> and will review the proposed NO<sub>x</sub> emissions limit in accordance with our PSD requirements as if the source had not yet been constructed." EPA conducted a full Top-Down BACT analysis for NO<sub>x</sub> as described in EPA's New Source Review Workshop Manual, Draft Edition, October 1990, (NSR Manual)<sup>1</sup> for a new facility. (See NSR Manual at Chapter B.)

EPA believes, therefore, that the commenters may be confusing the requirements set forth in 52.21(r)(4) for PSD applicability with the different requirements that apply to determining baseline emissions for purposes of the BACT cost effectiveness analysis. The commenters may be suggesting that EPA should have evaluated the cost effectiveness of installing SCR on a curing oven that was not equipped with LNB. EPA assumes the reason for the comment is because including LNB theoretically underestimates the uncontrolled emissions resulting in overestimating BACT cost effectiveness. If more tons of pollution are reduced by not using LNB in the cost-effectiveness baseline, then SCR would become more cost-effective.

That comment, however, would not be consistent with EPA's method of calculating baseline emissions for BACT cost effectiveness. EPA's NSR Manual provides guidance on determining baseline emissions for the cost effectiveness determination. The Manual states: "The baseline emissions rate represents a realistic scenario of upper bound uncontrolled emissions for the source....When calculating the cost effectiveness of adding post process emissions controls to certain inherently lower polluting processes, baseline emissions may be assumed to be the emissions from the lower polluting process itself. In other words, emission reduction credit can be taken for use of inherently lower polluting processes." (NSR Manual at page B.37.) Further, the NSR Manual provides: "In addition, historic upper bound operating data, typical for the source or industry, may be used in defining baseline emissions in evaluating the cost effectiveness of a control option for a specific source." (NSR Manual at page B.38.)

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<sup>1</sup> The NSR Manual is available on the internet through EPA's web site at <http://www.epa.gov/ttn/nsr/gen/wkshpman.pdf>.

The NSR Manual distinguishes between the calculation of the uncontrolled emissions for baseline cost effectiveness and determining uncontrolled emissions for PSD applicability. The Manual illustrates: “In another example, suppose sources in a particular industry historically operate at most at 85% capacity. For BACT cost effectiveness purposes (but *not* for applicability), an applicant may calculate cost effectiveness using 85% capacity. However, in comparing costs with similar sources, the applicant must consistently use an 85% capacity factor for the cost effectiveness of controls on those other sources.” (NSR Manual at page B.39.) The NSR Manual recognizes that some operating assumptions used in calculating baseline emissions do not need to be included as permit conditions. The Manual states: “Although permit conditions are normally used to make operating assumptions enforceable, the use of ‘standard industry practice’ parameters for cost effectiveness calculations (but *not* for applicability determinations) can be acceptable without permit conditions.” (NSR Manual at page B.39.)

In this case, LNB are constructed into the design of Knauf’s curing oven. LNB are typically included in numerous combustion units, such as the curing oven used at Knauf, and EPA, therefore, calculates the baseline emissions for BACT cost effectiveness using LNB. EPA correctly used LNB in the curing oven as the BACT cost effectiveness baseline emissions rate.

The comment, therefore, is incorrect. EPA does not find it necessary to make any changes to the permit as a result of this comment.

**Comment 2b:** Baseline emissions for NO<sub>x</sub> should be established using standard burners and LNB should be evaluated just as the other pollution control technologies are, rather than as baseline. (Ivan Hall)

**Response 2b:** See the response to comment 2a.

**Comment 2c:** The AAQIR mentions that SCR is used at Quietflex, a similar fiberglass facility in Texas. But the cost analysis given for Knauf for the installation of Selective Catalytic Reduction (SCR) is astronomical which makes one wonder why any facility would want to use it. (Ivan Hall)

**Response 2c:** The BACT analysis is a case-by-case determination and is specific to Knauf. In the economic impact portion of the BACT analysis, EPA used the average cost effectiveness to assess the economic feasibility of installing and using each control option for NO<sub>x</sub>, which included SCR. The average cost effectiveness is the total annualized cost of the control option divided by the annual emissions reductions. These figures are listed in Table 8 of the AAQIR. EPA considered the costs of using SCR at various points in the manufacturing line, which included the forming and curing sections and the Main Stack. EPA determined that the average cost effectiveness for installing

SCR anywhere in the manufacturing line, including at the Main Stack, was excessive and would not be cost effective. The lowest average cost effectiveness was \$14,034 per ton of NO<sub>x</sub> reduced. In this case, the costs may be excessive primarily due to the relatively low NO<sub>x</sub> emissions reductions that were expected compared to the annualized costs for installing SCR.

To date, no BACT determinations have been made in which SCR was required to control NO<sub>x</sub> at the manufacturing lines at other similar fiberglass facilities. The Texas Commission on Environmental Quality (TCEQ) issued a permit in May 2004 for a fiberglass facility called Quietflex Manufacturing in Texas. This permit was issued to avoid major source Non-Attainment New Source Review, so no cost analysis was completed. The permit conditionally required Quietflex to shutdown and install SCR, or an equivalent control device, at one of its manufacturing lines if the NO<sub>x</sub> limits for the facility could not be met. Like Knauf, Quietflex's manufacturing line uses a thermal oxidizer which greatly reduces VOCs emissions, but increases NO<sub>x</sub> emissions due to the thermal decomposition of ammonia and urea, which are used in the process, to NO<sub>x</sub>. EPA contacted TCEQ to determine the status of the installation of SCR at Quietflex and was informed that, based on NO<sub>x</sub> emissions tests, the facility was able to comply with its NO<sub>x</sub> emission limits. Based on this information, the facility was not required to and has not installed SCR.

SCR was considered in the BACT analysis for installation at the manufacturing line at the Johns Manville facility in Winder, Georgia. (This facility is listed in Table 6 of the AAQIR.) The cost effectiveness for installing SCR at the facility was estimated to be \$85,768 per ton of NO<sub>x</sub> reduced and was considered not to be cost effective.

Therefore, EPA continues to find that the cost of installing of SCR at Knauf's manufacturing line is excessive. SCR is commonly used at other industrial sources such as combustion processes at power plants.<sup>2</sup> These industrial sources are widely known to produce large amounts NO<sub>x</sub> which could be greatly reduced by SCR control.

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<sup>2</sup> For more information about SCR, see the Air Pollution Control Technology Fact Sheet for SCR, EPA-452/F-03-032, at EPA's Clean Air Technology Center on the internet at <http://www.epa.gov/ttn/catc/dir1/fscr.pdf>



**Comment 2d:** The AAQIR states that it will review the proposed NO<sub>x</sub> emissions limit in accordance with the PSD requirements as if the source had not yet been constructed. Yet, there are several considerations made as add-on sources, rather than not yet built. First, electric furnaces for the manufacturing line have not even been considered. Electric furnaces would eliminate most, if not all NO<sub>x</sub> emissions, and were not even considered in BACT determination. Selective Non-Catalytic Reduction was only considered as an add-on control device, not a primary device. (Mary Scott)

**Response 2d:** The comment that an electric furnace should have been included in the NO<sub>x</sub> BACT analysis for the manufacturing line indicates a misunderstanding of the fiberglass manufacturing process. As described in the AAQIR, there are two separate processes and separate emissions stacks. The manufacturing line is one part of the process and its emissions are vented to the Main Stack. The manufacturing line consists of the rotary spin glass fiber forming operation, and the curing and cooling operations. None of these processes require the use of a furnace -- electric or otherwise. Thus, an electric furnace has no application to any of the manufacturing line processes and would not be included in Step 1 of the Top-Down BACT analysis (identify all potentially available control technologies) for the manufacturing line processes at any fiberglass production facility. The molten glass production operation is a separate process from the manufacturing line processes, although it feeds into the rotary spin process in the manufacturing line. The electric glass melting furnace vents its emissions to the Furnace Stack. Therefore, EPA disagrees with the comment because an electric furnace has no technical role in the manufacturing line processes.

Regarding SNCR, the comment is not clear on what is meant by “primary device.” Selective Non-Catalytic Reduction (SNCR) is an add-on control device. It was eliminated as a control alternative in the NO<sub>x</sub> BACT analysis as technically infeasible because the inlet NO<sub>x</sub> concentration is too low to make the control technology effective. In order for SNCR to be feasible for reducing NO<sub>x</sub> at the manufacturing line, the control technology has to operate within a temperature range of 1600°F to 2100°F with elevated inlet NO<sub>x</sub> concentrations greater than 100 parts per million by volume (ppmv). Typical inlet NO<sub>x</sub> concentrations for sources that use SNCR vary from 200 to 400 ppmv.<sup>3</sup> SNCR is not effective at lower levels inlet NO<sub>x</sub> concentrations. The NO<sub>x</sub> concentrations from the forming and curing sections of the manufacturing line Main Stack would not exceed 10 ppmv, which means that SNCR is technically infeasible.

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<sup>3</sup> See the Air Pollution Control Technology Fact Sheet for SNCR, EPA-452/F-03-031, at EPA’s Clean Air Technology Center on the internet at <http://www.epa.gov/ttn/catc/dir1/fsnscr.pdf>.

The comment does not provide any specific information or facts to contradict EPA's determination that SNCR is technically infeasible to apply to this facility.

**Comment 2e:** The discussion of Table 6 in the AAQIR only includes plants that have "similar operations." It does not consider the lowest NOx emitting plant, Certainteed Corporation of Kansas City, KS. The controls used by that plant must be considered in the BACT analysis. (Mary Scott)

**Response 2e:** Certainteed Corporation of Kansas City, Kansas was considered in the BACT analysis for NOx. In establishing BACT, EPA relied primarily on the agency's RACT/BACT/LEAR Clearinghouse (RBLC) which contains a compilation of control technology determinations based on regulatory decisions made nationwide.<sup>4</sup> Table 6 of the AAQIR lists five similar facilities from the RBLC (including Johns Manville in Georgia and Knauf Insulation in Alabama) and one facility (Johns Manville in Indiana) not listed in the RBLC since the NOx limit for the facility is not a BACT emission limit.

Knauf's Shasta Lake, California facility uses thermal oxidizers to reduce VOC emissions and was not subject to PSD review for VOCs. The thermal oxidizers increase the potential for NOx emissions due to the thermal decomposition of ammonia and urea to form NOx. Thus, NOx emissions are expected to be higher when a thermal oxidizer, or other incineration device, is used on the manufacturing line than for a facility that operates without these VOC controls. Certainteed does not use thermal oxidizers.

EPA's Environmental Appeals Board (EAB) has frequently considered the question of what particular emissions limit constitutes BACT and how much latitude the permitting authority has in deviating from the lowest BACT emission limit in the RBLC. The EAB has recognized that the BACT evaluation is a case-by-case determination. (See *In re Knauf Fiber Glass, GmbH*, 8 E.A.D. 121 (EAB Feb. 4, 1999) ("*Knauf I*"). See also the NSR Manual at page B.1.) The EAB has stated that evidence of permits issued to similar facilities containing lower BACT emissions limits does not preclude setting a different BACT limit, provided the BACT limit is within a reasonable range of the lowest and is adequately justified. (See *In re Newmont Nevada Energy Investment, L.L.C.*, PSD Appeal No. 05-04 (EAB Dec. 21, 2005).) The EAB, relying on its decision in *Knauf I*, stated: "Further, '[d]ue to characteristics of individual plant processes, we recognize that application of identical technology may not yield identical emission limits.'" Thus, the EAB has clearly articulated that the permitting authority may set BACT within a reasonable range of emissions limits for a particular control technology and a particular facility configuration.

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<sup>4</sup> The RBLC is available on the Internet on EPA's Clean Air Technology Center at <http://www.epa.gov/ttn/catc/>.

Knauf initially underestimated the NO<sub>x</sub> emissions for its Shasta Lake, California facility because its engineers failed to account for the NO<sub>x</sub> emissions from its thermal oxidizers used at the curing section of the manufacturing line. At EPA's request, Knauf then applied for this revision to its PSD permit to correct the underestimate. In the facility's application, Knauf initially proposed a NO<sub>x</sub> emission limit of 2.78 lb/ton. EPA final BACT determination for NO<sub>x</sub> is 1.76 lb/ton. Because EPA was reviewing this BACT emissions limit as if construction had not yet begun, EPA evaluated whether Knauf could further reduce its emissions with additional emissions controls. EPA eliminated SCR based on cost-effectiveness. Next, EPA compared the requested NO<sub>x</sub> BACT emissions rate with other recent BACT analyses to determine if that rate was within a reasonable range.

Table 6 of the AAQIR shows that most fiberglass facilities operating with BACT controls for NO<sub>x</sub> require either LNB or "combustion controls." The NO<sub>x</sub> BACT limits for these facilities ranged from 1.00 lb/ton (Certainteed in Kansas) to 6.05 lb/ton (Johns Manville in Georgia). EPA considered the lower BACT emissions rate being achieved at Certainteed but determined that the BACT emissions rate of 1.76 lb/ton was justified for Knauf's particular facility based on its operation of the thermal oxidizers to reduce VOC emissions, and that this limit is among the lowest in the range of acceptable BACT rates. EPA's revised PSD permit sets a NO<sub>x</sub> BACT limit for Knauf at 1.76 lb/ton, which ranks Knauf just above the Certainteed's NO<sub>x</sub> BACT limit of 1.00 lb/ton and Johns Manville's NO<sub>x</sub> limit of 1.64 lb/ton (which is not a BACT limit) for its Indiana plant.<sup>5</sup> Knauf's BACT limit is substantially lower than the BACT limits of 3.00 to 6.05 lb/ton for several other facilities in the RBLC.

Beyond citing the lower NO<sub>x</sub> BACT rate at Certainteed (which EPA adequately considered in its BACT review), the comment does not provide any specific information or facts that support a different NO<sub>x</sub> BACT rate for this facility. The comment does not indicate how Knauf could achieve a lower NO<sub>x</sub> emissions rate. Therefore, EPA does not intend to revise the permit based on the comment.

**Comment 2f:** The BACT analysis should have a cost and energy impact analysis for the LNB. (Ivan Hall)

**Response 2f:** As explained in the response to comment 2a, LNB establishes the baseline for comparing the cost effectiveness of the NO<sub>x</sub> control alternatives. Cost and energy impact analyses are not necessary for the baseline control level.

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<sup>5</sup> For these facilities, the NO<sub>x</sub> BACT limits apply to the entire manufacturing lines at the facilities. Although the Knauf plant in Alabama has lower NO<sub>x</sub> limits, these NO<sub>x</sub> limits only apply to the curing sections of the facility's manufacturing lines and not the entire manufacturing lines which consist of the forming, curing and cooling processes.

**Comment 2g:** The environmental impacts shown on Table 9 in the AAQIR are only additional solid waste that must be disposed. This “additional solid waste” is what we are trying to keep out of the air. This should not be considered any more of an environmental impact when disposed in a landfill rather than emitted into the air. (Mary Scott)

**Response 2g:** The comment seems to imply that the “additional solid waste” addressed in Table 9 of the AAQIR would have been emitted into the outside air if not controlled. This is not the case. The environmental impacts analysis concentrates on impacts such as solid or hazardous waste generation, and not impacts on EPA’s air quality standards,. (See NSR Manual at page B.46.) The environmental impacts listed in Table 9 concern the disposal of spent catalyst when using SCR control that was considered in the BACT analysis. SCR is an add-on control device that chemically reduces NO<sub>x</sub> into molecular nitrogen (N<sub>2</sub>) and water vapor (H<sub>2</sub>O). SCR achieves this NO<sub>x</sub> reduction by using a solid material called a catalyst to increase the NO<sub>x</sub> removal efficiency. However, once the solid catalyst material can no longer be used, it must be disposed of, usually in a landfill, and would not be emitted into the outside air.

**Comment 2h:** SCR has not been given proper consideration in the environmental review documents prepared by EPA. (Eric Alan Berg for the Citizens for Clean Air and Water Campaign)

**Response 2h:** EPA disagrees. The comment is conclusory and provides no evidence to support its claim. As stated in the response to comment 2a, EPA conducted a full Top-Down BACT analysis for NO<sub>x</sub> as described in Chapter B of the NSR Manual. The BACT analysis considered the installation of SCR at various points on Knauf’s manufacturing line. EPA also conducted a cost, energy and environmental impacts analysis for NO<sub>x</sub> controls, including SCR, in accordance with the definition of BACT in the Section 165 of the CAA and the regulations at 40 CFR 52.21(b) (12) and as described in Chapter B of the NSR Manual. The comment does not supply sufficient detail for EPA to respond further.

**Comment 2i:** EPA has prepared a draft permit and an AAQIR that does not significantly address the issue of Best Available Control Technology (BACT). EPA includes no analysis for the installation of BACT. (Eric Alan Berg for the Citizens for Clean Air and Water Campaign)

**Response 2i:** The comment does not include any specific information or facts demonstrating that EPA’s BACT analysis or determination was incorrect or flawed. As stated in the responses to comments 2a and 2h, the AAQIR contains a full Top-Down BACT analysis that considers energy, environmental and economic impacts, and other costs associated with various potential controls. The BACT analysis was conducted in accordance with the definition of BACT in the Section 165

of the CAA and the regulations at 40 CFR 52.21(b) (12) and as described in Chapter B of the NSR Manual. The AAQIR and proposed permit contain EPA's determination of BACT. The comment does not supply sufficient detail for EPA to respond further.

**Comment 2j:** EPA considers SCR in conjunction with LNB in the BACT analysis for NO<sub>x</sub>, which is not appropriate. SCR should be evaluated as a stand-alone control technology separately from LNB. (Ivan Hall)

**Response 2j:** As explained in the response to comment 2a, EPA's NSR Manual at page B.37 states that when calculating the cost effectiveness of adding post process emissions controls (e.g., an add-on control device such as SCR) to certain inherently lower polluting processes, baseline emissions may be assumed to be the emissions from the lower polluting process itself. EPA followed this procedure in evaluating BACT for NO<sub>x</sub> and, thus, the BACT analysis is correct and appropriate.

**Comment 2k:** The section of the BACT analysis regarding evaluation of the most effective controls considers the costs of SCR as an add-on, not as if it were not yet built. The economic analysis is based on SCR as an add-on, not instead of LNBs. Would the total capital costs be the same as if the plant were not already built? Was it compared to the costs of LNBs? (Mary Scott)

**Response 2f:** See the responses to comments 2a and 2f.

### **3. PROPOSED PERMIT REQUIREMENT COMMENTS**

#### **3.1. Glass Production Limit**

**Comment 3.1a:** EPA should delete the 225 ton per day (TPD) glass production limit from the PSD permit because it is descriptive only. The project description of the permit should be revised to indicate that the 225 TPD production capacity for the electric glass melting furnace is descriptive only. The production limit is not required under PSD, and is not a BACT limit which focuses on emissions rates, not production rates. (Knauf)

**Response 3.1a:** EPA partially agrees with Knauf's comment. EPA's proposed revised permit contains two types of emissions limits: one limit is expressed in "lb/hr" and the other is expressed in "lb/ton of glass pulled." The effective limit on Knauf's maximum air emissions is the limit expressed in lb/hr. Knauf is prohibited from emitting more than 16.5 lb/hr of NO<sub>x</sub> and 28.4 lb/hr of PM<sub>10</sub> at the manufacturing line Main Stack and 0.67 lb/hr at the Furnace Stack. Therefore, EPA agrees with Knauf that the daily production rate (e.g., 225 TPD) does not directly affect the maximum allowable amount of either NO<sub>x</sub> or PM<sub>10</sub> which can be emitted from the facility. In other words, Knauf's allowable pollution is limited to 16.5 lb/hr of NO<sub>x</sub> and 28.4 lb/hr of PM<sub>10</sub> at the manufacturing line Main Stack and 0.67 lb/hr at the Furnace Stack regardless of how much glass is being produced at the facility.

The production rate in the proposed permit, however, is more than descriptive. The primary importance of the daily production rate is to ensure that when Knauf performs its annual source test, the facility is operating in a way that will accurately test for the maximum rate of emissions in lb/hr. Knauf is required to perform an annual source test to demonstrate that its BACT controls are maintaining its emissions below 16.5 lb/hr of NO<sub>x</sub> and 28.4 lb/hr of PM<sub>10</sub> at the manufacturing line Main Stack and 0.67 lb/hr at the Furnace Stack. The final permit contains a condition that requires Knauf to retest if the production level at the facility increases by more than 5 percent above the maximum production rate at which the facility has been tested within the last five years. This condition ensures that the source tests at the facility will accurately measure Knauf's worst case NO<sub>x</sub> and PM<sub>10</sub> emissions in lb/hr.

In the final revised PSD permit, therefore, EPA is modifying and clarifying the role of the production rate as it applies to the facility in two ways. First, we are removing the production rate in TPD as an absolute limit in the PSD permit. Second, in order to assure that Knauf is continually meeting its lb/hr limits for both NO<sub>x</sub> and PM<sub>10</sub> without an absolute production limit, the final PSD permit requires Knauf to retest the emissions from the facility if the production level at the facility increases by more than 5 percent above the maximum production rate at which the facility has been tested within the last five years. The requirements set forth in Conditions 35 and 59 of the final revised PSD

permit will assure the facility's emissions remain below the maximum allowable NOx and PM10 lb/hr emissions limits for the Main Stack and Furnace Stack. Conditions 34 and 58 require Knauf to calculate its hourly emissions based upon the lb/ton emission factors for NOx and PM10 established through previous emissions testing at the facility and the hourly glass production rate. Therefore, in addition to the retesting requirements, Knauf can only increase production at the facility if the emissions rates established through testing show that such an increase in production will keep emissions below 16.5 lb/hr of NOx and 28.4 lb/hr of PM10 at the manufacturing line Main Stack and 0.67 lb/hr at the Furnace Stack.

For purposes of calculating hourly emissions rates and triggering the 5 percent retesting requirements, Knauf can only rely on previous emissions tests which are less than 5 years old. In addition, Knauf must retest if the glass melting furnace is rebricked. EPA is finalizing the revised PSD permit with these two modifications and clarifications of the role of the daily production rate because the change will not cause any increase in emissions and results in better protection of the air quality. As a result, Conditions 18, 29, 20, 34, 41, 56, 55, 56, 59 and 64 in the final PSD permit have been modified in response to the comment. Also, Conditions 32, 35, 57 and 60 are new permit conditions that have been added to the final PSD permit in response to the comment.

The above changes to the permit are not significant because they do not affect the NAAQS and PSD increment analyses, and do not result in a change in the BACT or air quality emission limits.

**Comment 3.1b:** Several places in the fact sheet, public notice, and AAQIR state that increasing the production of fiberglass from 195 TPD to 225 TPD would not increase emissions. This is a factual error since, although the emission limits may not increase, actual emissions will increase. For this reason, the production increase should not be allowed. (Mary Scott)

**Response 3.1b:** The final permit sets emission limits for PM10 and NOx and allows Knauf to have PM10 and NOx air emissions up to the emission limits that are set in the permit. Thus, the commenter may be correct that actual emissions may increase. Such increases are allowed as long as the facility's emissions do not exceed the emission limits that are established in the permit. As explained in the response to comment 3.1a above, Knauf is permitted to emit 16.5 lb/hr of NOx and 28.4 lb/hr of PM10 at the manufacturing line Main Stack and 0.67 lb/hr at the Furnace Stack. Those maximum allowable emissions will not change as a result of Knauf's increase in the facility's daily production rate. The permit has not been revised in response to the comment.

### **3.2. General Requirements**

**Comment 3.2a:** Condition 1 of the proposed permit, which relates to notifying EPA of the initial performance test deadline, should be deleted because this condition has been satisfied and is no longer necessary or appropriate. (Knauf)

**Response 3.2a:** EPA disagrees. An initial performance test requirement is necessary for determining initial compliance with the revised emissions limits in the PSD permit. EPA has revised the permit to require an initial performance test to be performed for PM10 at the Furnace Stack and for NOx and PM10 at the manufacturing line Main Stack within 180 days after the effective date of permit. EPA added Conditions 26 and 56 to the final permit which require initial performance testing at the Furnace Stack and Main Stack.

These changes to the permit are not significant because they do not affect the NAAQS and PSD increment analyses, and do not result in a change in the BACT or air quality emission limits.

**Comment 3.2b:** Condition 2 of the proposed permit, which imposes a requirement to maintain and operate the facility in a manner consistent with good air pollution control practice for minimizing emissions, should either be deleted or should be tied to specific emission units. The only requirement that establishes this standard is the New Source Performance Standard (NSPS), which applies on a unit-by-unit basis, not on a plant-wide basis. (Knauf)

**Response 3.2b:** EPA disagrees. This is a general requirement to ensure that Knauf is operating the facility in accordance with good air pollution control practices. The condition applies to the entire facility. EPA has discretion to require appropriate permit conditions to minimize emissions from the facility and protect air quality. The comment has not resulted in any changes to the permit.

**Comment 3.2c:** Subsection c of Condition 3 of the proposed permit, which states that “compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violation of the permit” is inconsistent with the malfunction exemption, which is available under the NSPS at 40 CFR 60.11, and other comparable exemptions. (Knauf)

**Response 3.2c:** EPA has issued several documents over the past years setting forth our policy regarding excess emissions that occur during equipment malfunctions. The most recent, relevant document was issued on September 20, 1999, entitled “State Implementation Plans: Policy Regarding Excess Emissions During Malfunction, Startup, and Shutdown.” The 1999 Memo states: “As stated in its 1982 memorandum, because excess emissions might aggravate air quality so as to prevent attainment or interfere with maintenance of the ambient air quality standards, EPA views all excess emissions as violations of the applicable emission limitation.” EPA’s memo acknowledges that the relevant



enforcement authority may find “that imposition of a penalty for sudden and unavoidable malfunctions caused by circumstances entirely beyond the control of the owner or operator may not be appropriate.” But the excess emissions are a violation of the permit and EPA does not recognize malfunctioning equipment to excuse the violation of a permitted emissions limit. The PSD permit language is consistent with EPA’s policy regarding excess emissions during malfunctions and will not be changed.

**Comment 3.2d:** The first sentence of Condition 10 of the proposed permit, which states that “failure to monitor, record information, or maintain records” will be “considered a violation of the applicable emission standards,” is not based on any law or regulation and should be deleted. A violation of an applicable emission standard is a violation of the standard. A violation of a monitoring or recordkeeping requirement is a violation of that requirement, not of the underlying standard. (Knauf)

**Response 3.2d:** EPA has reviewed this requirement and determined that it was not our intent to say that a failure to monitor or keep records was an emissions violation. Monitoring and recordkeeping violations may occur independent of any occurrences of violations due to excess emissions. We did intend to highlight the fact that monitoring and recordkeeping requirements are an integral part of the permit and must be followed to determine the compliance status of the facility. The permit contains several monitoring and recordkeeping requirements. The first page of the permit states that “failure to comply with any condition or term set forth in this PSD Permit is subject to enforcement action pursuant to Section 113 of the Clean Air Act” which would cover any violations of any monitoring or recordkeeping requirements in the permit. In response to this comment, Condition 10 in the final PSD permit has been modified to remove first sentence which stated the following: “Failure to monitor, record information, and maintain records according to the following conditions will be considered a violation of the applicable emission standards.”

This change to the permit is not significant because it does not affect the NAAQS and PSD increment analyses, and does not result in a change in the BACT or air quality emission limits.

**Comment 3.2e:** The address on the cover page of the proposed permit is not correct. (Eric Cassano)

**Response 3.2e:** The proposed permit and AAQIR contained the address listed in Knauf’s PSD permit application which is 3100 District Drive, Shasta Lake, California 96019. The address appears to be incorrect. EPA contacted Knauf about this discrepancy, and on March 10, 2006, Knauf notified EPA that the current address for the facility is 3100 Ashby Road, Shasta Lake, California 96019. The cover page of permit has been modified to include the correct address.

**Comment 3.2f:** The draft permit contains conditions for controlling air pollution in the abstract. EPA describes the derivation of the conditions in the AAQIR for the draft permit and the reasons for them poorly and without sufficient evidence. (Eric Alan Berg for the Citizens for Clean Air and Water Campaign)

**Response 3.2f:** Knauf submitted an application to revise its PSD permit issued in March 2000 by the Shasta County Air Quality Management District (AQMD). Knauf's application requested an increase for its NOx emissions at the facility. The PM10 BACT limit was revised to include condensable PM10 which was not considered in the previous BACT determination.

The AAQIR contains extensive BACT analyses in which the PM10 emission limit that applies at the Furnace Stack is reassessed and a BACT determination is made for NOx at the Main Stack treating the facility as if Knauf had not yet constructed. The proposed permit contained EPA's determinations for PM10 at the Furnace Stack and NOx at the Main Stack which are explained in the AAQIR. The proposed permit also contained the monitoring, testing and recordkeeping requirements for maintaining the BACT controls and requirements for demonstrating compliance with the BACT emission limits. Most of these requirements were established in the original PSD permit issued in March 2000. However, EPA added requirements for periodic and annual emissions testing for PM10 and NOx and semiannual reporting.

The comment does not include any specific information or facts demonstrating that EPA's BACT analysis or determination was incorrect or flawed. The comment does not supply sufficient detail for EPA to respond further.

**Comment 3.2g:** EPA should put a requirement in the new permit to require Knauf to do a health survey. (Betty Doty)

**Response 3.2g:** In issuing a PSD permit, EPA is required to evaluate Knauf's PSD permit application for its Shasta Lake facility in accordance with the CAA and its implementing regulations at 40 CFR 52.21. EPA is not aware of any statutory or regulatory provision that would allow us to require a health survey as a condition of granting approval of Knauf's application. Consideration of requiring a health survey is not part of the PSD review process. However, the PSD review process ensures that health-based the NAAQS continue to be met as discussed further in the response to comment 4b.

### **3.3. Glass Furnace Requirements**

**Comment 3.3a:** Condition 17 of the proposed permit should be revised to change the word "protable" in the last line to "portable." (Knauf)

**Response 3.3a:** The permit has been modified to include this change.

**Comment 3.3b:** Condition 22 of the proposed permit, which establishes PM10 emission limitations for the Furnace Stack should be changed in the following three ways (a) the limitation should be set at 1.0 lb/hr, not 0.67 lb/hr; (b) the emission limit should be expressed simply in terms of pound per hour, and not pound per ton of glass pulled, because the emission rate per production unit will vary based on the production level; and (c) the annual limit should be deleted. (Knauf)

**Response 3.3b:** (a) EPA's proposed PSD permit used the 0.67 lb/hr PM10 emission limit to calculate the BACT limit of 0.07 lb/ton glass pulled for the Furnace Stack. EPA believes the proposed limit of 0.67 lb/hr is protective of air quality and human health. Therefore, the proposed emission limit of 0.67 lb/hr will not be modified.

(b) EPA disagrees with Knauf that the final PSD permit should delete any lb/ton of glass pulled emission limit for two reasons. First, the emission limit expressed in lb/ton of glass pulled represents the BACT emissions standard which is used to compare emissions performance between fiberglass facilities. According to the NSR Manual, for the purpose of determining the BACT emissions level, it is generally most effective to express emissions performance as an average steady state emissions level per unit of product produced or processed. (See NSR Manual at page B.22.) In other words, the lb/ton of glass pulled emission rate is equivalent to a concentration limit for purposes of comparing performance across the industry and for ensuring Knauf's pollution control performance is maintained at lower production levels. This emission limit ensures that Knauf will minimize its PM10 emissions at the Furnace Stack, as well NOx and PM10 emissions at the manufacturing line, even when Knauf is operating at a reduced production rate.

Second, as shown in Tables 5 and 6 of the AAQIR, such limits have been included in previous BACT determinations for other similar fiberglass facilities. Also, EPA's federal New Source Performance Standards (NSPS) for glass melting furnaces and manufacturing lines at glass manufacturing plants, including fiberglass plants, have limits that are expressed in lb/ton. Furthermore, EPA's emission factors for glass fiber manufacturing published in AP-42 (AP-42, Fifth Edition, Volume I, Chapter 11: Mineral Products Industry) are in terms of lb/ton. Therefore, lb/ton is a generally recognized way of representing emissions from this industry. The permit has not been modified as a result of the comment.

(c) The annual limit of 2.2 TPY was calculated incorrectly in the proposed permit. The limit should have been equal to 0.67 lb/hr in terms of TPY based on year-round operation at 8760 hours per year. Therefore, the annual limit should have been equal to 2.9 TPY, and not 2.2 TPY. EPA modified Condition 22 in the final permit to require an annual limit of 2.9 TPY, instead of 2.2 TPY. This change to the permit is not significant because it does not

affect the NAAQS and PSD increment analyses, and does not result in a change in the BACT or short-term lb/hr air quality emissions limits. Thus, this change should not result in more emissions being emitted into the atmosphere than were expected.

**Comment 3.3c:** Condition 23 of the proposed permit, which imposes a requirement to record the hours of operation of the glass melting furnace on a daily basis and retain records of the hourly glass pull rate, should be removed. The condition should not require recording the hours of operation of the glass melting furnace because the glass melting furnace runs 24 hours a day, and there is no benefit by tracking the number of hours it runs in any given day. (Knauf)

**Response 3.3c:** Since Knauf is required to maintain and operate monitors that continuously monitor the glass pull rate from the furnace on an hourly basis, EPA agrees that a separate requirement to record the hours of operation of the glass melting furnace is not necessary. Condition 23 in the final PSD permit has been modified to remove this requirement. This change to the permit is not significant because it does not affect the NAAQS and PSD increment analyses, and does not result in a change in the BACT or air quality emission limits.

However, since the permit condition requires continuous monitoring of the glass pull rate on an hourly basis, the facility must keep records of the hourly glass pull rate which is required by the general recordkeeping requirement in Condition 10 of the proposed permit. Therefore, the permit has not been modified to remove the requirement to retain records of the hourly glass pull rate.

**Comment 3.3d:** Condition 24 of the proposed permit, which establishes a 5 percent opacity limit for any three minute average, should be changed to impose that limit on a six minute basis, since six minute averages are the federal standard, and three minute averages are not applicable to a federal PSD permit. Six minute opacity averages are the compliance method, per 40 C.F.R. 60.11 and 40 C.F.R. 60, Appendix A, Method 9. (Knauf)

**Response 3.3d:** For clarification, the opacity limit in the proposed permit actually requires the facility not to exceed a 5 percent opacity limit for a period greater than three minutes in any one hour period, and is not a three minute average. However, EPA believes a six minute average basis is more enforceable and consistent with how opacity should be measured and recorded in accordance with EPA Test Method 9 and Performance Specification 1 of Appendix B. Also, opacity observations are made according to EPA Test Method 9 and Method 9 observers must be certified to perform EPA Test Method 9 observations. Therefore, the permit has been modified to require a six minute averaging period in response to this comment. This change to the permit is not significant because it does not affect the NAAQS and PSD increment analyses, and does not result in a change in the BACT or air quality emission limits.

**Comment 3.3e:** Condition 25 of the proposed permit should be changed to six minute averages, since a six minute averaging period is the federal standard, not a three minute averaging period. (Knauf)

**Response 3.3e:** Condition 25 of the proposed permit is the requirement for installing and operating an opacity monitor. As explained in the response to comment 3.3d, the data recording requirements for the opacity limit must match the six minute averaging period requirement which is consistent with EPA Test Method 9 and Performance Specification 1 of Appendix B. Therefore, the permit has been modified to require a six minute averaging period in response to this comment. This change to the permit is not significant because it does not affect the NAAQS and PSD increment analyses, and does not result in a change in the BACT or air quality emission limits.

EPA also modified Condition 28 in the final PSD permit to require Knauf to test for PM<sub>10</sub> emissions at the Furnace Stack using EPA Methods 1 through 5, and 202, which are Federal test methods, instead of CARB Methods 1 through 5. Both the EPA and CARB test methods are substantially equivalent.

**Comment 3.3f:** Condition 29 of the proposed permit, which establishes the criteria for conducting performance tests, should be modified to allow the submission of written results within 60 days of the test date, rather than 30 days. (Knauf)

**Response 3.3f:** EPA agrees that a reasonable time frame for the submission of test reports is within of 60 days of the performance tests. The permit has been modified in response to this comment. This change to the permit is not significant because it does not affect the NAAQS and PSD increment analyses, and does not result in a change in the BACT or air quality emission limits.

**Comment 3.3g:** Condition 29 specifies that the annual emissions test shall be performed at a minimum of 95% of maximum operating capacity of 225 tons. Considering the different products produced, it would be easy for Knauf to perform the tests while manufacturing the least polluting product, thus giving a less than average reading of pollutants. Different products are made with different amounts of binder, varying from no binder for unbonded blowing wool insulation to 10% binder by weight for some products. This testing should be required to be performed at a minimum of 95% of the most polluting manufacturing process. (Mary Scott)

**Response 3.3g:** Condition 29 of the proposed permit corresponds to the emission testing requirement for the electric melting furnace which only produces molten glass. Binder is not used at the electric melting furnace. The commenter is most likely referring to Condition 51 of the proposed permit since this condition applies to the manufacturing line where binder is used to produce bonded fiberglass insulation products. Condition 51 in the proposed permit has been revised in the final PSD permit (see the response to comment 3.1a).

For the unbonded fiberglass operations, the permit does not require emissions testing for these operations since they are vented within Knauf's building and not directly to the outside air. But the permit does contain permit conditions that require the facility to capture the emissions from these operations within the building and requires monitoring, recordkeeping and reporting requirements to prevent any emissions from escaping the building.

For the bonded operations, according to Knauf's PSD permit application, the quantity of binder solids sprayed on the bonded products could range from 4 to 10 percent. Knauf typically produces bonded products that use 4 or 5 percent binder 90 to 95 percent of the time within a year and other products that have higher binder contents during the remaining 5 to 10 percent of the same year. Therefore, it may not be possible for the facility to always test when it is producing products with the highest binder content.

EPA does believe it is reasonable for the facility to identify the type of product(s) and expected binder content for the product(s) that is expected to be produced during a performance test. EPA revised Condition 55 of the final PSD permit which is the performance test protocol requirement for the manufacturing line. The revised permit condition requires Knauf to identify the operating conditions and products that are expected to be produced during each performance test. The revised permit condition also requires Knauf to include a summary of the various materials formed over the past year and the percent of time during which those materials were produced that would have a higher potential NO<sub>x</sub> and PM<sub>10</sub> emissions. If the test is performed while producing a material that does not have the highest potential NO<sub>x</sub> or PM<sub>10</sub> emissions, a retest may be required if the test results do not demonstrate a sufficient margin to assure compliance during all operating scenarios. This

change to the permit is not significant because it does not affect the NAAQS and PSD increment analyses, and does not result in a change in the BACT or air quality emission limits.

**Comment 3.3h:** Condition 31 of the proposed permit should be modified to remove references to a lb/ton of glass pulled limit because the emission limit should be expressed in terms of lb/hr, not lb/ton. (Knauf)

**Response 3.3h:** See the response to comment 3.3b.

**Comment 3.3i:** Condition 32 of the proposed permit should be deleted because it provides no useful data. This condition requires the permittee to use an emission factor gained through the performance test to determine compliance on an hourly basis. The emission factor will be based on the same test data, and therefore if it is in compliance on any hour, it will be in compliance for all hours. Calculating and recording a number repeatedly over the course of the year that does not have any relevance to compliance is unduly burdensome. (Knauf)

**Response 3.3i:** EPA disagrees. The permit condition is a useful method of showing continuous hourly compliance with the lb/hr emission limit. Although the method may show that the facility is complying with its lb/hr emission limit at and below the average glass production rate tested at, it may not show compliance for certain glass production rates higher than the average glass production rate tested at during the most recent performance test or from testing performed within the last five years. The permit condition limits how much Knauf can increase production so that the facility continuously complies with its emission limit on an hourly basis. Therefore, the permit has not been modified in response to the comment.

**Comment 3.3j:** Condition 34 of the proposed permit should be deleted because excess emissions cannot occur for Condition 22 if the performance test emission factor is in compliance with the underlying emission limitation. (Knauf)

**Response 3.3j:** EPA disagrees. Excess emissions can occur if the facility operates at certain glass production rates that are higher than the average glass production rate tested at based on the most recent performance test or based on testing within the last five years. Therefore, the permit has not been modified in response to the comment.

**Comment 3.3k:** Condition 36 of the proposed permit, which allows Knauf to waive the annual test and/or allow testing to be done at less than 95% of the maximum operating capacity, should be removed since the permit should not waive the test for any reason, as long as the facility is in operation and emitting pollutants. (Mary Scott)

**Response 3.3k:** The final revised PSD permit requires annual emissions testing for both NO<sub>x</sub> and PM<sub>10</sub>. The final PSD permit requires Knauf to retest any time Knauf increases its glass production by 5 percent or more than the maximum production rate at which the facility was tested at in the last five years. Therefore, the testing requirements are protective and will ensure Knauf's compliance with its emissions limits.

EPA may waive the annual source test, but only upon prior written notification and adequate justification. Therefore, EPA continues to find the testing requirements in the revised PSD permit to be sufficiently enforceable and protective.

### **3.4. Forming/Curing/Cooling (Manufacturing Line) Requirements**

**Comment 3.4a:** Condition 38 of the proposed permit, which establishes a molten glass feed rate limitation, should be deleted because there should be no production limitation of 225 tons in rolling 24-hour period. In addition, if this condition is maintained, the last sentence of Condition 38 should be limited to "reasonable" times for which EPA can inspect the production log. (Knauf)

**Response 3.4a:** The permit condition has been revised to remove the limitation on molten glass production. The condition still requires Knauf to maintain records of the throughput of molten glass in TPD and maintain a log of the throughput that is available for inspection by EPA. The condition does not limit times in which EPA can inspect the log to only "reasonable" times. For the reasons discussed in the response to comment 3.1a, this change to the permit is not significant because it does not affect the NAAQS and PSD increment analyses, and does not result in a change in the BACT or air quality emission limits.

**Comment 3.4b:** Condition 40 of the proposed permit, which imposes NO<sub>x</sub> and PM<sub>10</sub> emission limitations on the main stack, should be modified to remove the references to a lb/ton emission limit. (Knauf)

**Response 3.4b:** See the response to comment 3.3b.

**Comment 3.4c:** Condition 41 of the proposed permit, which imposes an opacity limitation on a three minute average, should be changed to establish that limitation on a six minute average since the six minute average is the federal standard. (Knauf)

**Response 3.4c:** See the response to comment 3.3d.



**Comment 3.4d:** Table 2 of the proposed permit, which imposes testing requirements, should be modified to remove the testing requirement for the “wet ESP inlet” because the inlet emissions are not emitted into the ambient air. There should be no requirement to test “inlet” loadings under this permit. (Knauf)

**Response 3.4d:** Table 2 corresponds to Condition 47 of the proposed permit. Condition 47 requires that Knauf provide sampling ports at certain locations, including the wet electrostatic precipitator (ESP) inlet, for determining emission control efficiency. This permit condition was derived from the original PSD permit issued in March 2000. Since a sampling port would be necessary at the “wet ESP inlet” to determine the emission control efficiency at the electrostatic precipitator (ESP), then the condition is necessary as it is stated in the proposed permit. Therefore, the permit has not been revised in response to the comment.

**Comment 3.4e:** Condition 51 of the proposed permit, which establishes certain testing requirements, should be modified to allow 60 days to submit a written report to EPA of results of any such test. (Knauf)

**Response 3.4e:** See the response to comment 3.3f.

**Comment 3.4f:** Conditions 53 and 55 of the proposed permit should be removed because the limitations should be based simply on a lb/hr basis, and, in any event, the calculated number would simply be based on the same compliance test in all instances and would always show either compliance, or noncompliance, based on whether the stack test showed compliance or noncompliance. (Knauf)

**Response 3.4f:** See the responses to comments 3.3i and 3.3j.

**Comment 3.4g:** Condition 56 of the proposed permit, which imposes certain requirements relating to failures of a leak bag detection system, should be removed because there are no baghouses or bag leak detection systems on these sections of the plant. (Knauf)

**Response 3.4g:** The condition, which imposes certain requirements relating to failures of a leak bag detection system, has been removed in the final PSD permit since there are no baghouses or leak detection systems on the operations that make up the manufacturing line at the facility. This change to the permit is not significant because it does not affect the NAAQS and PSD increment analyses, and does not result in a change in the BACT or air quality emission limits.

**Comment 3.4h:** Condition 58 of the proposed permit, which allows Knauf to waive the annual test and/or allow testing to be done at less than 95% of the maximum operating capacity, should be removed since the permit should not waive the test for any reason, as long as the facility is in operation and emitting pollutants. (Mary Scott)

**Response 3.4h:** See the response to comment 3.3k.

**Comment 3.4i:** The proposed permit does not include Condition 57 of the original PSD permit and it should include this requirement. (Colleen Leavitt)

**Response 3.4i:** Condition 57 of the original PSD permit issued on March 14, 2000 states the following: "Under no circumstances shall the owner/operator be allowed to operate the system with operational parameters beyond the limits specified in Conditions #45, #47, and #48. The owner/operator shall take immediate action to bring the operational parameters to within the specified limits. Immediate action for the purpose of this condition shall be defined as within four (4) hours of the discovery of the exceedance."

The final PSD permit for Knauf contains operational limitations for the manufacturing line that must be complied with at all times. (See also the response to comment 3.2c.) Thus, the permit conforms to federal requirements for malfunctions and requires immediate corrective action. Therefore, the permit will not be revised in response to the comment.

### **3.5. Fiberglass Trimming & Operating Requirements**

**Comment 3.5a:** The second sentence of Condition 60 of the proposed permit, which requires the dust collectors to be equipped with differential pressure measuring devices for the daily monitoring and recording of pressure drop, should be removed because the pressure drop is a meaningless parameter. The operative parameter is the bag leak detector, which will identify when a bag is leaking, and the requirement for pressure drop monitoring is therefore unnecessary and unduly burdensome. (Knauf)

**Response 3.5a:** EPA agrees. The permit has been revised to include the change. This change to the permit is not significant because it does not affect the NAAQS and PSD increment analyses, and does not result in a change in the BACT or air quality emission limits.

**Comment 3.5b:** Condition 61 of the proposed permit, which requires certain corrective actions to be imposed in the event of leaking or torn bags in this section, should be removed because the operations exhaust into the plant, not into the ambient atmosphere, and therefore any permit requirement to implement corrective action is not necessary to protect the ambient air, and is therefore unduly burdensome. (Knauf)

**Response 3.5b:** EPA disagrees. The requirement ensures that emissions released from torn or malfunctioning bags are mitigated and do not escape from the building, and that any emissions releases within the building from this operation will be properly controlled to prevent these emissions from affecting the outside air. Therefore, the permit will not be not be revised in response to the comment.

**Comment 3.5c:** Conditions 62 and 64 of the proposed permit should be removed from the permit since the bags exhaust inside the building and therefore any requirement for corrective action associated with a leaking bag should not be necessary under this permit since the air that escapes, if any, would not vent to the ambient air. (Knauf)

**Response 3.5c:** The permit conditions referred to in the comment are the recordkeeping and reporting requirements for Condition 61 of the proposed permit. The permit conditions will be used to assure compliance with Condition 61 of the proposed permit. Therefore, the permit will not be revised in response to the comment.

**Comment 3.5d:** Subsection d of Condition 63 of the proposed permit, which requires recordkeeping of pressure drop across the filter modules, should be removed because the bag leak detection system should satisfy any leak detection requirement. (Knauf)

**Response 3.5d:** EPA agrees. The permit has been revised to remove the requirement for the pressure drop. This change to the permit is not significant because it does not affect the NAAQS and PSD increment analyses, and does not result in a change in the BACT or air quality emission limits.

### **3.6. General Comments Regarding Permit Requirements**

**Comment 3.6a:** Concerned that the upper limit of total pollutants be kept as close to the actual limits. That is, at maximum permitted production rates the emissions should not be allowed to exceed control standards and total annual permitted emissions. Once tight guidelines are in place, a monitoring and reporting system should be in place to ensure compliance. All this information should be public record and available upon request. (Douglas Bennett)

**Response 3.6a:** The permit requires BACT and air quality emission limits for PM10 and NOx. Knauf is required to abide by these limits at all times. The permit contains

testing, monitoring, recordkeeping and reporting requirements to ensure that compliance with the emission limits will be met on a continuous basis. The permit, AAQIR, and any other documents used to draft the proposed and final permits, including documents provided to EPA by Knauf, are part of the Administrative Record. The Administrative Record is located at the EPA Region 9 office in San Francisco, California and available for public inspection. Any public documents, including the permit, in the Administrative Record are available upon request.

**Comment 3.6b:** The AAQIR mentions that Knauf's emissions tests demonstrated that the original permit limits for NO<sub>x</sub> were not appropriate. How can EPA ignore the company's violations of the law by saying the permit limits were "not appropriate"? (Eric Cassano)

**Response 3.6b:** As explained in the AAQIR, Knauf previously accepted NO<sub>x</sub> limits at 24.8 TPY which allowed the facility to avoid Federal PSD permitting for the pollutant before the facility constructed and commenced operation. Emissions testing for NO<sub>x</sub> showed that the facility could not comply with its permitted NO<sub>x</sub> level of 24.8 TPY and that Knauf's NO<sub>x</sub> emissions were greater than the Federal significance threshold of 40 TPY, making them subject to Federal PSD permitting for NO<sub>x</sub> before the facility constructed. EPA conducted a full Top-Down BACT analysis for NO<sub>x</sub> and evaluated BACT as if Knauf had not constructed. Therefore, Knauf was required to obtain a PSD permit for NO<sub>x</sub> and did not benefit from its noncompliance. (See the responses to comments 5a and 5b.)

**Comment 3.6c:** The proposed permit does not have any conditions for enforcement and compliance. There are no consequences or penalties for Knauf not complying with the permit, other than reporting malfunctions and non-compliance. There must be punitive consequences for Knauf not complying with PSD limits.  
(Mary Scott)

**Response 3.6c:** Section 113 of the CAA establishes EPA's authority to enforce compliance with PSD emissions limits. The CAA provides that EPA may issue an order requiring compliance, may issue an administrative penalty order for non-compliance, or may file a judicial action in federal court. (See Section 113(a) of the CAA.) The CAA in Section 113(e) sets forth parameters for establishing appropriate penalties for violating PSD emissions limits, such as the size of the business, prior compliance history, good faith efforts to comply, the economic benefit of non-compliance and the seriousness of the violation.

EPA has issued several documents relating to enforcement of CAA violations, such as the CAA Penalty Policy. Documents related to CAA enforcement are available at the web site of EPA's Office of Enforcement and Compliance Assurance.

EPA cannot provide different enforcement procedures or penalties in an individual permit than those that are required or allowed by the CAA. In addition, EPA cannot estimate penalties or speculate about appropriate injunctive relief for prospective violations. Therefore, EPA disagrees with the comment. The commenter should note that one factor in the CAA Section 113(e) penalty assessment criteria is the violator's past compliance history.

#### **4. AIR QUALITY RELATED COMMENTS**

**Comment 4a:** The ambient NO<sub>x</sub> levels used in the air report's computer modeling were measured in the town of Bella Vista, California back in the year 2000. How can this computer modeling possibly be accurate considering that the data was collected at least 5 years ago? The town of Bella Vista is close to 9 miles east of Knauf's factory and approximately 320 feet lower in elevation. An air analysis that uses data measured in Bella Vista can not possibly be accurate and should not be used by the EPA to support giving Knauf higher pollution limits. (Eric Cassano)

**Response 4a:** The computer air quality modeling used in the air quality impact analysis directly models the emissions from the Knauf facility to determine the impact of the facility. Therefore, the background ambient levels measured at Bella Vista do not affect the accuracy of the computer modeling used to determine the air quality impact of the facility itself.

The air quality impacts from the Knauf facility were below the modeling significance level ( $1 \mu\text{g}/\text{m}^3$ ). The background ambient air quality data would only be relevant if the impacts from the facility had been above the modeling significance level. In that case, the ambient data would have been used to determine if the impacts from the facility, added to the background ambient air quality, would violate the annual average NO<sub>2</sub> NAAQS of  $100 \mu\text{g}/\text{m}^3$ . However, for the Knauf facility, the impacts from the facility ( $0.45 \mu\text{g}/\text{m}^3$ ) were below the modeling significance level ( $1 \mu\text{g}/\text{m}^3$ ) and EPA does not need to consider background ambient air quality.

Even if EPA had considered background ambient air quality, a review of the 2005 NO<sub>2</sub> annual average data from EPA's 'AirData' (see <http://www.epa.gov/air/data/>) indicates that NO<sub>2</sub> annual averages in northern California range from 0.008 to 0.016 ppm (approximately 15 to  $30 \mu\text{g}/\text{m}^3$ ). This data includes data from sites in urban areas which would include a large mobile source impact. The annual average NO<sub>2</sub> impact of  $0.45 \mu\text{g}/\text{m}^3$  from the Knauf facility, added to the annual average NO<sub>2</sub> background data from data from this range (15 to  $30 \mu\text{g}/\text{m}^3$ ) would still be well below the annual average NO<sub>2</sub> NAAQS of  $100 \mu\text{g}/\text{m}^3$ .

**Comment 4b:** EPA states that the proposed increase of NO<sub>x</sub> emissions will not violate the NAAQS. This is meaningless and misleading since the air quality standards have been decimated in favor of corporate pollution. The standards right now are very low, which is why Knauf is acting swiftly to take advantage. (Suzy Coffee)

**Response 4b:** The commenter seems to imply that the NAAQS for NO<sub>2</sub>, which is the standard for NO<sub>x</sub>, has been changed since the time it was promulgated by

EPA. The primary and secondary NAAQS for NO<sub>2</sub> are currently 0.053 ppm (100 µg/m<sup>3</sup>), annual arithmetic mean concentration. The standards were promulgated in 40 CFR 50.11 on July 19, 1985, and have not been changed since that time. The primary standard is based on criteria used to protect public health. The secondary standard is based on criteria used to protect public welfare, which include effects on soils, water, vegetation, man-made materials, animals, wildlife, weather, visibility, climate, damage and deterioration to property, hazards to transportation, and effects on personal comfort and well-being. As noted in the response to comment 4a, Knauf's air quality impact is significantly below the primary and secondary NAAQS.

**Comment 4c:** The AAQIR includes an air quality impact analysis with data that does not apply to what Knauf is actually doing at their facility. (Eric Alan Berg for the Citizens for Clean Air and Water Campaign)

**Response 4c:** The comment does not provide adequate information for EPA to respond. Based on all available information, EPA has determined that Knauf has met the requirements for EPA to revise the facility's PSD permit.

**Comment 4d:** Statistics on NO<sub>x</sub> levels can and have been manipulated to favor Knauf's output, for example testing site remote from the plant. EPA should conduct its own scientifically valid study and not just accept the previous numbers from Knauf. (Susan Walden)

**Response 4d:** The comment does not provide adequate information for EPA to respond. Based on all available information, EPA has determined that Knauf has met the requirements for EPA to revise the facility's PSD permit.

**Comment 4e:** The supplemental EIR for Knauf was seriously flawed because the air quality assessments were done in Chico, not Shasta Lake where Knauf is located which is not accurate. (Kathy Kallan)

**Response 4e:** EPA's air quality analysis did not consider the air quality assessments in the supplemental EIR for Knauf since the air quality assessment portion of the supplemental EIR was not submitted for consideration in the PSD permitting process and is not required for compliance with the regulatory or statutory provisions for PSD.

**Comment 4f:** I find it hard to believe that the proposed increase in NO<sub>x</sub> will not have a significant affect on air quality. The EPA is basically saying that air credits bought by Knauf are not increasing air pollution. (Kathy Kallan)

**Response 4f:** EPA does not consider the use of air emission reduction credits (ERCs) in the PSD process and has not considered ERCs in drafting the proposed or final PSD permit.

## **5. ENFORCEMENT & COMPLIANCE RELATED COMMENTS**

**Comment 5a:** The PSD permit should include conditions specifying the enforcement consequences if Knauf does not comply with the permit limits. (Mary Scott, Colleen Leavitt, Kathy Kallan) EPA should not approve the proposed permit revision and should fine Knauf whenever it exceeds the limits. (Edward and Suzanne Kowalewski, Patricia Jiminez).

**Response 5a:** Section 113 of the CAA establishes EPA's authority to enforce compliance with PSD emissions limits. The CAA provides that EPA may issue an order requiring compliance, may issue an administrative penalty order for non-compliance, or may file a judicial action in federal court. (See Section 113(a) of the CAA.) Section 113(e) of the CAA sets forth parameters for establishing appropriate penalties for violating PSD emissions limits, such as the size of the business, prior compliance history, good faith efforts to comply, the economic benefit of non-compliance and the seriousness of the violation.

EPA has issued several documents relating to enforcement of CAA violations, such as the CAA Penalty Policy. Documents related to CAA enforcement are available at the web site of EPA's Office of Enforcement and Compliance Assurance.

EPA cannot provide different enforcement procedures or penalties in an individual permit than those that are required or allowed by the CAA. In addition, EPA cannot estimate penalties or speculate about appropriate injunctive relief for prospective violations. Therefore, EPA disagrees with the comment. The commenters should note that one factor in the Section 113(e) penalty assessment criteria of the CAA is the violators past compliance history.

**Comment 5b:** Knauf's application for a revised PSD permit should be denied because Knauf was in violation of the PSD Permit issued in 2000. (Edward and Suzanne Kowalewski, Eric Cassano, Susan Walden). Knauf's application for a revised PSD permit should be denied until Knauf settles all outstanding violations. (Luise Landers) Knauf should be shutdown due to its past violations. (Eric Cassano, Serafin Jiminez, Mary Scott). It is appalling that EPA will vote to increase pollution at Knauf since it has not paid fines for violations in its current permit. (Chris Hunter, Richard & Elaine Harrison). Knauf low-balled their emission estimates to avoid more stringent permit requirements. (Kathy Kallan)

**Response 5b:** When Knauf initially submitted its PSD application for a PSD permit to construct a new facility, its engineers estimated the potential emissions of the as yet unbuilt facility. The PSD program is focused on estimates prior to construction so that the permitting authority can anticipate the emissions and place appropriate conditions in the permit. Shortly after the facility was built, Knauf performed testing to confirm that its emissions estimates were correct.



Knauf discovered that its engineers had underestimated the potential NO<sub>x</sub> emissions and overestimated potential PM<sub>10</sub> emissions.

EPA took the appropriate action in responding to Knauf's admissions of higher than estimated NO<sub>x</sub> emissions. Specifically, EPA made Knauf apply for a revision to the PSD permit as if Knauf had not yet constructed the facility, as set forth in 40 CFR 52.21(r)(4). EPA required Knauf to perform a complete BACT analysis as a new source subject to PSD for NO<sub>x</sub>. In that analysis, EPA established a BACT limit for NO<sub>x</sub> and Knauf must comply with that limit. EPA also evaluated the impact of increased NO<sub>x</sub> emissions and determined that the NO<sub>x</sub> emissions would remain substantially below the NAAQS.

EPA has added some testing, monitoring and recordkeeping conditions to this permit. EPA has determined that the conditions in the final PSD permit will ensure Knauf's continuous compliance with the BACT emissions limits for both NO<sub>x</sub> and PM<sub>10</sub>.

Thus, EPA disagrees with the comment. Because we evaluated Knauf's NO<sub>x</sub> emissions as if the facility had not yet constructed (see page 9 of the AAQIR), Knauf has not benefited from underestimating its NO<sub>x</sub> emissions during its pre-construction application. EPA conducted a full and independent PSD evaluation of the NO<sub>x</sub> emissions as it would have done if Knauf's initial PSD application had been accurate. The comments that were submitted have not provided any facts demonstrating that EPA's permitting decision would have been different if Knauf had correctly estimated its NO<sub>x</sub> emissions initially.

As the commenters recognize, EPA issued a Notice of Violation (NOV) to Knauf. Relatively soon after EPA issued the NOV, the District took an enforcement action against Knauf. The District ultimately settled the violation for a settlement package valued at more than \$600,000. Section 113 of the CAA is structured so that EPA is required to give the local air quality authority notice of an expected violation. The purpose of the requirement is to allow the local authority to take action in the first place, which is what happened here. When the local authority fails to take action or the action is inadequate, then EPA may commence further action. In this case, however, EPA concluded that the District's enforcement response, together with requiring Knauf to evaluate its actual NO<sub>x</sub> emissions as if the facility had not yet constructed, constituted a satisfactory response. The comment letters have not provided information or facts showing that Knauf has not been adequately penalized.

**Comment 5c:** EPA should investigate the totality of the process by which the agency originally permitted Knauf and how after Knauf was granted a PSD permit in 2000 they willfully disregarded their promises to the agency and public. (Eric Alan Berg for the Citizens for Clean Air and Water Campaign)

**Response 5c:** See the response to comment 5b.

## 6. PROCEDURAL COMMENTS

**Comment 6a:** The public notice was inadequate because no address or phone number was given to view the complete Administrative Record. The 45- or 60-day public comment period should begin again after new notification. (Mary Scott)

**Response 6a:** 40 CFR section 124.10(d)(iv) states that EPA should provide the name, address and telephone number of the person to contact for further information on the proposed permit. The public notice that EPA published on January 31, 2006, and a clarification to the public notice that EPA published on March 19, 2006, before the close of the public comment period are available on EPA's web site at <http://www.epa.gov/region09/air/permit/knauf/>. Both notices were published in the Redding Record Searchlight, which is the newspaper of general circulation in the Shasta Lake area.

Our public notice on January 31, 2006, inadvertently omitted the phone number of EPA's contact person, Shaheerah Kelly. However, the public notice correctly listed the EPA contact's fax number and address, as well as a web site address that contained a direct link to an internet address specifically dedicated to the Knauf permit: <http://www.epa.gov/region09/air/permit/knauf/>. The web site was available to the public on February 3, 2006. The EPA contact's telephone number was correctly listed on the web site. All Region 9 staff telephone numbers are available on the Region 9 web site, and numerous residents of Shasta Lake have made frequent calls to EPA staff to discuss opposition to the facility. Finally, EPA held a public hearing on the proposed revised PSD permit on March 8, 2006, and EPA published a clarification with the EPA contact's telephone number listed on March 19, 2006, before the close of the public comment period.

Therefore, EPA does not believe that the absence of the EPA contact's phone number from the public notice that appeared in the Shasta Lake newspaper resulted in any harm. The phone number was available easily, EPA was available at the public hearing, and EPA published a clarification.

**Comment 6b:** The Administrative Record should be available locally in the cities of Shasta Lake and Redding for public review. The best thing would be to make copies of the documents available at the Shasta County Library in Redding, California. (Mary Scott)

**Response 6b:** The procedural requirements governing EPA's issuance of PSD permits is set forth at 40 CFR Part 124. 40 CFR Section 124.10 sets forth the requirements for public notice of permit actions. In particular, Section 124.10(d)(iv) requires public notice to provide the "(iv) Name, address and telephone number of a person from whom interested persons may obtain further information, including copies of the draft permit or draft general permit, as the case may be, statement of basis or fact sheet, and the application." Section

124.10(d)(vi) requires EPA to provide the following information: “ (iv) For EPA-issued permits, the location of the administrative record required by § 124.9, the times at which the record will be open for public inspection, and a statement that all data submitted by the applicant is available as part of the administrative record.”

EPA complied with the procedural requirements by making the administrative record available at the EPA offices for public inspection. The fact that EPA did not provide a copy of the entire administrative record locally in Shasta Lake is not a violation of any requirement.

In fact, EPA went beyond the requirements of 40 CFR Part 124. EPA provided copies of the proposed permit, AAQIR (which constitutes the statement of basis), fact sheet (which briefly described EPA’s PSD action), and public notice locally for public review at the Shasta Lake Gateway Library in Shasta Lake, California and the Shasta County Library in Redding, California. EPA also made these materials available on the internet at <http://www.epa.gov/region09/air/permit/knauf/>.

EPA received only one inquiry from Ivan Hall requesting the location administrative record and only one request from Mary Scott to have the administrative record available locally. Considering the volume of documents contained in the Administrative record and the fact that only one member of the public was interested in having these documents available locally, EPA disagrees with the comment that EPA should have made the administrative record available locally.

**Comment 6c:** The announcement should be sent to everyone in Shasta County not just the people who attend a meeting for public comment. (Chris Hunter, Richard & Elaine Harrison)

**Response 6c:** EPA is not completely clear on what announcement the commenters are referring to. However, EPA mailed the public notice and a fact sheet, which summarized EPA’s action, to a list of interested persons consisting of State, Federal and local contacts, as well as numerous members of the public. EPA’s mailing list was compiled based on the Federal requirements at 40 CFR Part 124, which does not require the agency to notify the entire county. The mailing list consisted of persons at more than 500 individual mailing addresses. The mailing list consisted of local, State and Federal contacts and interested members of the public compiled by EPA and the Shasta County AQMD. It also consisted of a list, which was provided by a local resident named Heidi Silva, of several interested members of the public that lived in the vicinity of Knauf. In addition, Shasta County AQMD’s mailing list included a list of several residents from the local County Assessor’s office.

**Comment 6d:** The announcement should be put to a vote through the State. (Richard & Elaine Harrison)

**Response 6d:** EPA's PSD action is a Federal action and is not required to be put through a vote for the entire State of California.

## **7. HEALTH RELATED COMMENTS**

**Comment 7a:** Bronchitis has gotten worse and people with respiratory illnesses will be hurt by the increase in emissions. (Henry Francis) EPA should investigate health related complaints and give greater consideration to the citizens. (Eric Alan Berg for the Citizens for Clean Air and Water Campaign)

**Response 7a:** Under the authority of the CAA, EPA has established NAAQS and PSD increment levels to protect the public health and welfare. The purpose of the PSD permitting program is to ensure that air emissions from stationary sources do not cause or contribute to a violation of the NAAQS. The purpose of the PSD increments is to ensure that air quality in areas that have cleaner air than the NAAQS, such as the City of Shasta Lake, does not deteriorate beyond established levels. EPA evaluated the increased NO<sub>x</sub> emissions levels that this PSD permit requires Knauf to meet according to the PSD provisions.

Knauf submitted an application for this modification to its existing PSD permit in May 2003. Knauf supplemented the PSD application with additional information in September and December 2003, in February, June and October 2004, and December 2005. EPA drafted a proposed revision of the existing PSD permit to allow Knauf to emit higher levels of NO<sub>x</sub> and slightly more PM<sub>10</sub> from the furnace stack. The proposed revised PSD permit contains control requirements to ensure that Knauf will not cause or contribute to a violation of the NAAQS and will not exceed the PSD increments. Along with the proposed permit, EPA provided a supporting analysis in the AAQIR.

After considering the comments provided during the public comment period and at the public hearing, EPA has determined that the revised PSD permit should be issued with some changes. EPA, therefore, is issuing a final revised PSD Permit to Knauf. Although there will be some increases in air emissions, primarily NO<sub>x</sub> emissions, from the facility, EPA has determined that these emissions will be manageably controlled, and will not adversely affect the public health and welfare because the emissions are substantially below the NAAQS and PSD increment.

Specifically, Knauf's annual average NO<sub>x</sub> maximum concentration based on conservative modeling assumptions at 99 TPY is 0.45 µg/m<sup>3</sup> which is substantially lower than the Class II increment (25 µg/m<sup>3</sup>) and significance level (1 µg/m<sup>3</sup>). Therefore, EPA disagrees with the comment.

**Comment 7b:** Fiberglass particles are a well known health hazard. The 120 jobs created at Knauf do not compensate for the possible increased health risks of cancer, asthma, esp. to elderly and children. Live 2.5 miles from the plant and feel they are at a daily risk. (Edward and Suzanne Kowalewski) I don't want to 'breathe in' any of those fibers, which are so obvious to the naked eye. (Holly Nelson)

**Response 7b:** Federal PSD review under the CAA does not regulate all air emissions or all activities by a facility subject to PSD. For example, hazardous air pollutants are regulated under Section 112 of the CAA rather than under PSD regulations. Odors are typically regulated by local nuisance ordinances. Landfill disposal issues are governed by state law.

Knauf is subject to one the Federal National Emission Standards for Hazardous Air Pollutants (NESHAP) which is regulated under Section 112 of the CAA. Knauf is subject to the NESHAP for Wool Fiberglass Manufacturing (40 CFR Part 63, Subpart NNN), which regulates emissions of particulate matter emissions at the melting furnace and particulate matter and formaldehyde emissions from the manufacturing line. Knauf is required to comply with the NESHAP as the facility is subject to the standards.

When Knauf received its initial PSD permit allowing construction of the facility, several people filed petitions with the EAB raising objections to Knauf's potential emissions of respirable fiberglass particles, odors, toxic pollutants and disposal in landfills. The EAB denied these petitions noting that regulation of these issues were beyond the scope of the PSD program. The EAB further noted that Shasta County AQMD had nonetheless responded to comments on these issues concerning potentially respirable fiberglass emissions. Specifically, the EAB cited the fact that the initial PSD permit contained conditions for a monitoring program conducted by Shasta County AQMD and required Knauf to test its PM10 emissions for glass fiber content. The EAB stated: "These two conditions go beyond the requirements of the PSD program to provide important information to AQMD and the public regarding fiberglass emissions from the facility." (See *In re Knauf Fiber Glass, GmbH*, 8 E.A.D. 121 (EAB Feb. 4, 1999) ("*Knauf I*").)

The EAB also noted that an EIR was prepared prior to construction of Knauf's facility and that the agency overseeing that process had responded to similar comments.

EPA's revision of the initial Knauf PSD permit did not change those conditions. Therefore, although the comments go beyond the scope of EPA's authority under the PSD program, EPA notes that the Shasta County AQMD and Knauf are continuing to perform additional analysis not required by PSD to minimize the potential problems.

**Comment 7c:** The valley, where the cities of Shasta Lake and Redding are located, is like Southern California and there is no where for the bad air to go. Particle matter will settle into the lakes that surround Redding that are all of California drinking water and people are breathing deadly cancer-causing agents. (Richard & Elaine Harrison)

**Response 7c:** See the response to comment 7a.

**Comment 7d:** Who is researching the local health of the citizens and environment for short and long term effects of the Knauf emissions? Knauf must be held monetarily responsible for every health claim against it, for the restoration of every bit of local environment damaged by its imposed pollution, since it has made the north state its home. (Suzy Coffee)

**Response 7d:** See the response to comment 3.2k.

**Comment 7e:** At the meeting on March 8, 2006 in Shasta Lake, pamphlets were available from the EPA stressing the harmful effects of NOx and PM10. Then EPA has the unmitigating gall to substantially allow an increase in pollution levels at Knauf. (Susan Walden)

**Response 7e:** EPA provided pamphlets to the public regarding NOx and particulate pollution at the public information session and public hearing held on March 8, 2006. The pamphlets were intended to educate the public about the nature of these pollutants, the sources of these pollutants, and their health effects. The pamphlets were also intended to help the public understand why EPA regulates these pollutants from industrial plants and mobile sources such as cars and diesel trucks. The PSD permitting program is one of a number of EPA programs aimed at regulating air pollution. The program does not eliminate all pollution but is intended to minimize pollution at industrial sources to prevent the existing air quality in the area from significantly deteriorating.

**Comment 7f:** Those with respiratory problems would not be benefited by the increase in emissions. (Henry Francis)

**Response 7f:** See the response to comment 7a. Also, People with respiratory problems and other sensitive populations are considered when EPA sets the NAAQS. EPA cannot issue a permit to a facility that would violate the NAAQS. Thus, if an increase in emissions does not violate the NAAQS, it would be protective of public health.



## 8. GENERAL COMMENTS

**Comment 8a:** EPA should deny Knauf's request to increase its emissions. (Holly Nelson, Edward and Suzanne Kowalewski, Suzy Coffee, Eric Cassano, Virginia Merryman, Susan Walden, Serafin Jiminez, and Mr. & Mrs. Albert J. Zimmerman). Opposed to any increases at Knauf. (Shirley Gallant of the Citizens for Clean Air, Patricia Jiminez, and Gean Vonk)

**Response 8a:** As stated earlier in this document, EPA established NAAQS for PM10 and NOx pursuant to the CAA. EPA also established PSD increment levels. EPA determined that the NAAQS and PSD increments would protect public health and welfare, and the environment. The purpose of the PSD permitting program is to ensure that air emissions from stationary sources do not cause or contribute to a violation of the NAAQS. The purpose of the PSD increments is to ensure that air quality in areas that have cleaner air than the NAAQS does not deteriorate beyond established levels.

The revised PSD permit contains control requirements to ensure that Knauf will not cause or contribute to a violation of the NAAQS and will not exceed the PSD increment. Along with the proposed permit, EPA provided a supporting analysis in the AAQIR. Specifically, Knauf's annual average NOx maximum concentration based on conservative modeling assumptions will be  $0.45 \mu\text{g}/\text{m}^3$  which is substantially lower than the Class II increment ( $25 \mu\text{g}/\text{m}^3$ ) and significance level ( $1 \mu\text{g}/\text{m}^3$ ).

**Comment 8b:** The EPA and the purpose of the Clean Air Act are to continually clean and improve environmental qualities of the earth, air and water. How does adding more pollutants fit with the mission of continually cleaning the air? (Russ Wade)

**Response 8b:** See the response to comment 7a and 8a.

**Comment 8c:** The prevailing winds in this closed-end valley allow heavier fallout over a smaller area than suitable for clean air. Knauf should never have been sited here. EPA should have independent investigations (besides Knauf) of the actual fallout before increasing PSD limits. EPA should look into some, if not all, health and other complaints of odor, noise, and night time operations and dumping practices. (Virginia Merryman)

**Response 8c:** See the responses to comments 7a and 7b. In addition, EPA's PSD authority does not provide for oversight of the local agency's decisions regarding siting. EPA determined that Knauf's application to revise its existing PSD permit met the PSD requirements.

**Comment 8d:** The AAQIR is inadequate and must be redone. (Eric Alan Berg for the Citizens for Clean Air and Water Campaign)

**Response 8d:** The comment is conclusory and provides no evidence to support its claim.

**Comment 8e:** Because Knauf does not have a Federal Title V operating permit, the facility must now rely on EPA to approve their new PSD permit application in the hope of one day being given a Federal operating permit. (Eric Alan Berg for the Citizens for Clean Air and Water Campaign)

**Response 8e:** The Title V operating permit program is a separate permit program that has procedures that are administered independently of the PSD action EPA is taking. The Title V program is administered by the Shasta County AQMD. The AQMD is not required to wait for EPA to issue the PSD permit before issuing Knauf's Title V operating permit.

**Comment 8f:** The initial air quality analysis for Knauf was grossly inadequate. Why are you even considering approval of yet another revision? (Elizabeth A. Ballou)

**Response 8f:** EPA's current revision of the Knauf's PSD permit is the first revision of the facility's PSD permit. There have not been any other revisions of the PSD permit since the permit was issued in March 2000. As EPA discussed in prior responses to comments, EPA treated Knauf's request to increase its NOx emissions as if the facility had not yet constructed. Shasta County AQMD also took an enforcement action against Knauf. Therefore, Knauf has not benefited from its mistaken emissions estimates before construction.

The adequacy of the initial air quality was subject to public comment and upheld in a review by the EAB.

**Comment 8g:** BACT should be required for leftover fiberglass particles that have to be taken to the landfill to filter the leftover particles through the ground so that nothing gets into the air. (Dwight Bailey)

**Response 8g:** BACT is required for controlling the air pollution from the processes at the facility that produce air pollution, such as the glass melting furnace or the manufacturing line processes. It does not apply to controlling solid industrial waste or solid waste disposal.

**Comment 8h:** You made a couple of comments in your speech and then also in the permit that it wasn't subject to Federal rules because the Federal government had delegated authority to the County and now they've taken it back. The original permit was not directly issued by the Federal government, but it was absolutely subject to all Federal requirements. The actual legal language is that AQMD is allowed to stand in the shoes of EPA in issuing the permit and that the permit remains a Federal permit and EPA does not -- is not excused from their oversights. So it was a Federal permit and it still is a Federal permit. (Colleen Leavitt)

**Response 8h:** During the public hearing and in the AAQIR, EPA stated that Knauf's permit (permit no. 97-PO-06) was issued by the Shasta County AQMD in 2000. In general, a permit issued by a local air agency can include requirements from Federal and State, as well as local programs that the local air agency is authorized to implement. During the public hearing and in the AAQIR, EPA stated that Knauf's permit was a combined PSD (i. e., Federal) and local preconstruction permit. Since Knauf was a major source for PM10, the PSD portion of the permit contained Federal PSD requirements for regulating PM10. The permit referred to the local preconstruction portion of the permit as an Authority to Construct (ATC). The ATC portion of the permit contained several County requirements, including emission limits for NOx, VOCs, and CO that were used to limit the facility's emissions of these pollutants to below the PSD significance thresholds in order to avoid PSD review, and making the facility not subject to the Federal PSD review for these pollutants. (See Condition 52 of permit no. 97-PO-06.)

Also, at the public hearing and in the AAQIR, EPA explained, and wanted the public to understand, that although NOx was not initially permitted as a Federal PSD pollutant in 2000, EPA later determined that Knauf was subject to Federal PSD review for NOx. Thus, NOx was to be regulated, with PM10, as a PSD pollutant in Knauf's Federal PSD permit. Since the Shasta County's PSD delegation was withdrawn in 2003, EPA is acting on the Federal PSD portion of permit no. 97-PO-06 since EPA is currently the Federal PSD permitting authority in Shasta County.

The comment is, therefore, incorrect in its implication that EPA stated that Knauf's permit was not a Federal permit.

**Comment 8i:** Knauf is off-gassing more pollution at night. (Colleen Leavitt, F. Ted Schalesky)

**Response 8i:** Knauf is subject to emission limits on NOx and PM10, as well as other pollutants. The facility is required to comply with these emission limits at all times. The comment does not explain or provide any supporting evidence of this phenomenon.